

## **Appendix 7-I**

### **SEDIMENTATION POND CERTIFICATION**



# **BLACKHAWK ENGINEERING, CO.**

Rt. 1, Box 146-H5 - Helper, Utah 84526 - Telephone (801) 637-2422

September 30, 1985

Mr. Bill Stoddard  
Co-Op Mining Co.  
P.O. Box 1245  
Huntington, Ut. 84528

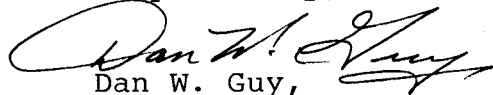
Re: Bear Canyon Mine  
Pond Certifications

Dear Mr. Stoddard:

Enclosed are the certifications for the Bear Canyon Sedimentation Ponds "A" and "B". I have also enclosed the results of the compaction tests taken on each of the ponds.

I appreciate the opportunity to work with you on this project. If you have any questions, or need any further information, please let me know.

Respectfully,

  
Dan W. Guy,  
President

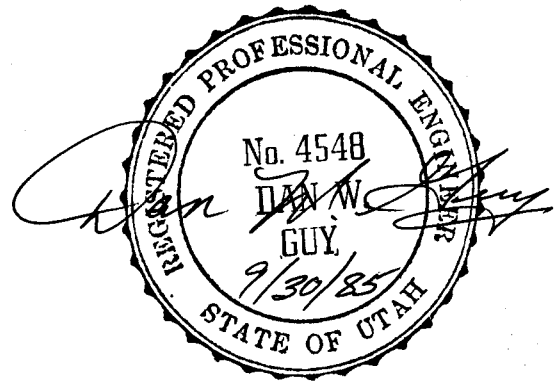


# **BLACKHAWK ENGINEERING, CO.**

Rt. 1, Box 146-H5 - Helper, Utah 84526 - Telephone (801) 637-2422

September 30, 1985

I have observed the construction practices and checked the compaction and dimensions of the Bear Canyon Sedimentation Pond "A". I hereby certify that this pond is constructed to the specifications set forth in the Mining and Reclamation Permit.





# **BLACKHAWK ENGINEERING, CO.**

Rt. 1, Box 146-H5 - Helper, Utah 84526 - Telephone (801) 637-2422

September 30, 1985

I have observed the construction practices and checked the compaction and dimensions of the Bear Canyon Sedimentation Pond "B". I hereby certify that this pond is constructed to the specifications set forth in the Mining and Reclamation Permit.



# C P ENGINEERING SERVICES

Rt 1, Box 15-L, Helper, Utah 84526

(801)472-5181

September 6, 1985

Blackhawk Engineering Co.  
c/o Dan W. Guy, President  
Rt. 1, Box 146-H5  
Helper, Utah  
84526

Dear Mr. Guy:

Attached are test results for nuclear gauge testing on the Co-Op Mine property in Bear Canyon. These tests were performed between August 26, 1985 and September 4, 1985, and cover in-place density testing on both of the impoundments located in Bear Canyon.

As shown in the test results, the embankment on the smaller pond was removed to the 1.5 foot level, re-compacted and then reconstructed to the 7 foot level. Material was placed in 8 to 10 inch lifts, watered, and compacted, with density testing being performed at approximately 1.5 foot intervals. All test results recorded were within 1.5% of the required relative density, which is in keeping with gauge tolerance of  $\pm 1.5\%$ . Due to the careful placement and monitoring of this embankment, stability should be no problem.

In as much as the larger pond was already constructed, the only practical way to determine in-place density was to dig test pits at various elevations within the interior slopes and perform density testing in those locations. It should be noted here that no sloughing of the slopes of the excavated test holes was observed at any time and all in-place density tests performed in these locations were at or near 90% of maximum. I would think that this would be ample proof of the stability of this structure.

In conclusion, it is my opinion that both of the impoundments discussed here have been constructed with the best material available on the site and in keeping with good construction practice, and have been carefully monitored during construction. I know of no reason why they should not be certified as such.

Please let me know if I may be of further assistance.

Sincerely,



Frank L. Pero  
Sr. Field Engr.

# C P ENGINEERING SERVICES

Rt 1, Box 15-L, Helper, Utah 84526  
(801)472-5181

Nuclear moisture/density determination 8/26 - 9/4 1985  
Gauge: Troxler Mod. 3411-B, S.N. 8597  
Proctor: 121.0 P.C.F.  
Optimum Moisture: 11.9%  
Location: CO-OP Mine Impoundments, Bear Canyon  
Tested by: Frank L. Pero, C P Engineering Services

No.	Location	%P	%M	El.
1	Scale Pond @12"	72.9	12.2	FL. +1.5
	" " @6"	72.5		
2	" " @12"	76.6	13.3	"
	" " @6"	70.0		
3	" " @12"	78.7	14.7	"
	" " @6"	72.7		
4	" " @12"	76.8	7.5	"
	" " @6"	73.2		
5	" " @12"	74.5	9.0	"
	" " @6"	77.1		
6	" " @12"	88.3	7.1	FL. +7.0
	" " @6"	90.7		
7	" " @12"	95.1	8.5	"
	" " @6"	93.4		
8	" " @12"	87.6	13.2	"
	" " @6"	90.7		

**\*\*NOTE:** Tests in ascending order, upstream to downstream, embankment divided into approximate quarters. Embankment subsequently removed to 1.5 foot level, re-compacted, and then re-tested. Re-tests follow:

9	Scale Pond @12"	92.5	12.9	FL. +3'
10	" " @12"	97.3	12.2	"
11	" " @12"	92.9	14.1	"
12	" " @12"	89.4	12.6	"

**\*\*NOTE:** Following tests in Tipple Pond. Tests taken in excavated areas at random elevations throughout internal slopes.

13	Tipple Pond @4"	89.6	6.1	Top Dike
14	" " @12"	88.8	11.5	FL. +6'
15	" " @12"	90.9	10.4	FL. +5'
16	" " @12"	86.4	7.0	FL. +4"

No.	Location	%P	%M	El.
17	Scale Pond @10"	95.2	13.0	FL. +4.5'
18	" " @11"	93.2	14.0	"
19	" " @8"	96.3	13.8	"
20	" " @12"	97.4	11.3	"
21	" " @12"	91.9	13.9	FL. +6'
22	" " @12"	96.2	13.1	"
23	" " @8"	94.4	12.4	"
24	" " @8"	91.8	13.5	"
25	" " @12	88.5	12.2	FL. +7'
26	" " @12"	93.1	10.0	"
27	" " @12	88.7	14.3	"
28	" " @12	89.1	11.1	"

"I certify that the foregoing is a true and accurate account of the test results represented herein."

*Frank L. Pero*

Frank L. Pero



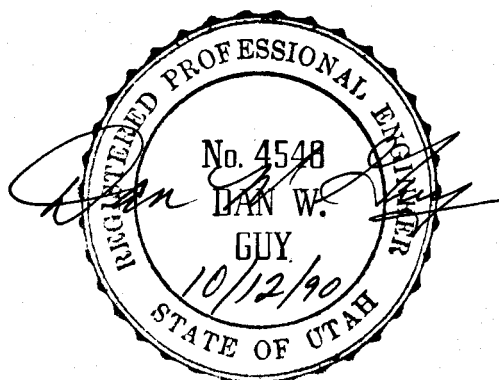
# **BLACKHAWK ENGINEERING, CO.**

Rt. 1, Box 146-H5 - Helper, Utah 84526 - Telephone (801) 637-2422

October 12, 1990

I have resurveyed the Sediment Pond 'A' at the Bear Canyon Mine, owned by Co-Op Mining Co.. I have also checked the slopes, dimensions and capacity of the pond against the approved design plan. The present capacity of the pond is calculated to be 2.04 acre feet at design overflow. The only variance to the regulations noted is the steep slope (1.55h:1v) on the outer east bank; however, this is a pre-existing slope and its stability was verified by a stability analysis on 9/30/85.

I hereby certify that this pond has been cleaned and re-constructed to the extent necessary, in accordance with the approved plans and regulations, with the exceptions noted above.



CO-OP MINING CO.

POND INSPECTION REPORT

POND: Sediment Pond 'A'

LOCATION: Bear Canyon Mine

ITEM

REMARKS

(1) Potential Safety Hazards

None Noted.

(2) Slope Stability

All slopes appear stable.

Outer slopes vegetated.

(3) Erosion

No erosion evident.

(4) Construction and Maintenance  
Performance Standards

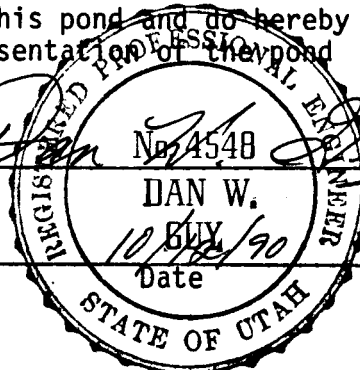
Pond recently cleaned and re-  
surveyed. Meets plan design standards.

Present Capacity at Overflow - 2.04 ac.ft

(5) Recommendations/Comments

Outer slopes steeper than recommended;  
however, integrity was verified by  
stability analyses on 9/30/85.

I have performed the above inspection on this pond and do hereby  
certify it to be a true and accurate representation of the pond  
at this time.



September 4, 1993

Re: Sediment Pond 'C' Construction Certification, Bear Canyon Mine, Emery County,  
Utah

I have observed the referenced impoundment during constuction and upon completion of construction. Size and configuration has been verified and as-built maps have been completed for submittal. I hereby certify that this impoundment is constructed in accordance with the approved plan and R645 Rules.

